

***Resolve Environmental Services, PLLC***

410 East Franklin Street  
Monroe, North Carolina 28112  
(704) 289-5881 phone  
(704) 292-2910 fax  
[www.resolvepllc.com](http://www.resolvepllc.com)



September 17, 2014

Ms. Jacqueline Smith  
539 Baltimore Road  
Warrenton, NC 27589

Re: Water Supply Well Sampling Results  
539 Baltimore Road, Warrenton, NC

Dear Ms. Smith:

This letter is to inform you of the recent water supply well (WSW-1) sampling results conducted on August 25, 2014. Resolve Environmental Services, PLLC (Resolve) has been contracted by the Warren County Solid Waste Department to conduct semi-annual ground water sampling activities at their facility. The water supply well connected to your residence was included in the sampling schedule.

A concentration of zinc (30.2 µg/L) was reported in the ground water sample. **The concentration of zinc does not exceed the North Carolina Ground Water Quality Standards (NCGWQS) (2,100 µg/L).** No other detectable concentrations of requested method constituents were reported in the ground water sample. A copy of the applicable analytical report has been included as an attachment. This information has been submitted to the NCDENR Solid Waste Section and will be maintained in their files.

As part of the ongoing sampling schedule at Warren County Landfill, WSW-1 is scheduled to be sampled again in February 2015. The analytical results will be forwarded to you following the receipt of the analytical report. If you have any questions, please call me at (704) 289-5881.

Sincerely,

Laura Minor

cc: Mr. Ervin Lane, NCDENR-Division of Waste Management/Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646  
Mr. Marshall Brothers, Warren County Solid Waste Department, 559 Baltimore Road, Warrenton, North Carolina 27589

attachment

## ***Resolve Environmental Services, PLLC***

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Monroe, NC 28112  
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September 17, 2014

Mr. Ervin Lane  
Compliance Hydrogeologist  
NCDENR  
Division of Waste Management  
Solid Waste Section  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

***Re: Second Semi-Annual 2014 Ground Water Monitoring Event  
Warren County Closed Sanitary Landfill  
Warrenton, North Carolina  
Facility Permit# 93-01  
Resolve Project No 765.21***

Dear Mr. Lane:

Please find the attached Second Semi-Annual 2014 Ground Water Monitoring Report conducted at the Warren County Closed Sanitary Landfill in August 2014. Also included in this package is a copy of the "Water Supply Well Sampling Results" letter based on the August 2014 sampling of the water supply well located at 539 Baltimore Road. Please note that the original Environmental Monitoring Reporting Form associated with the August 2014 sampling event will be mailed to you separately. You should receive it in the following week. Please call if you have any questions or require any additional information at (704) 289-5881.

Sincerely,



Laura Minor  
Project Manager

enclosures

## ***Resolve Environmental Services, PLLC***

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410 East Franklin Street  
Monroe, NC 28112  
(704) 289-5881 phone  
(1-704) 919-5616 e-fax

September 17, 2014

Mr. Marshall Brothers  
Warren County Solid Waste Department  
559 Baltimore Road  
Warrenton, North Carolina 27589

Re: Second Semi-Annual 2014 Ground Water Monitoring Event  
Warren County Closed Sanitary Landfill  
Warrenton, North Carolina  
Resolve Project No. 765.21

Dear Mr. Brothers:

Resolve Environmental Services, PLLC (Resolve) respectfully presents results of the second semi-annual 2014 ground water monitoring event conducted at the Warren County Closed Sanitary Landfill (CSL) located in Warrenton, North Carolina (**Figure 1**). The ground water monitoring activities were conducted in general accordance with North Carolina Department of Environment and Natural Resources' (NCDENR), Division of Solid Waste Management guidelines.

### **Gauging and Sampling**

On August 25, 2014, Resolve personnel collected ground water samples from on-site monitoring wells MW-1A, MW-2, MW-3, and MW-4. In addition, three surface water samples (SW-1, SW-2 and SW-3) were collected along the tributary of Possumquarter Creek during the August 2014 sampling event. A water quality sample was also collected from the nearby water supply well (WSW-1) located on the adjacent residential property to the northwest (539 Baltimore Avenue). A site map is provided as **Figure 2**.

Prior to collecting ground water samples from the monitoring wells, water levels were measured in each well from the top of the well casing. Based on the depth to water gauging data, Resolve personnel calculated the volume of standing water in each monitoring well. For quality control purposes, one equipment blank was collected prior to the initiation of ground water sampling activities by passing distilled water provided by the laboratory through a clean, Teflon™ bailer. Each well was purged of at least three well volumes or until bailed dry using a new, disposable Teflon™ bailer. As generated, the purge water was discharged to the ground surface at the respective wellheads. Prior to sample collection, field parameters for temperature, pH, and specific conductance were measured using calibrated field instrumentation. Well gauging data and measured field parameters are summarized in **Table 1**. The surface water samples were collected using grab sample techniques. All collected samples were placed directly into laboratory supplied glassware and placed on ice for transport to a North Carolina certified laboratory for analyses.

The collected ground water samples and equipment blank were analyzed for the presence of Appendix I volatile organic compounds (VOCs) including tetrahydrofuran by EPA Method 8260B and Appendix I metals by EPA Method 6010, as required by the NCDENR. The samples were analyzed by Accutest Laboratories, LLC (Accutest) of Orlando, Florida. Accutest is a North Carolina certified laboratory. A trip blank was also submitted to the laboratory for analysis of Appendix I VOCs by Method 8260B.

## **Results**

Based upon the laboratory analytical report, detectable concentrations of Appendix I VOCs and/or metals were reported in each of the collected samples as summarized below.

### **MW-1A:**

Detectable concentrations of lead and zinc were reported in the ground water sample collected from MW-1A. The concentrations did not exceed the North Carolina ground water quality standards (NCGWQS) established in T15A NCAC 2L.0202.

### **MW-2:**

Detectable and/or estimated concentrations of benzene, p-dichlorobenzene, cis-1,2-dichloroethylene, cobalt, barium, lead and zinc were reported in the ground water sample collected from MW-2. None of concentrations exceeded the NCGWQS, if established. Currently, there is no NCGWQS established for cobalt; therefore, the concentration is reportable.

### **MW-3:**

Detectable and/or estimated concentrations of benzene, chlorobenzene, chloroethane, p-dichlorobenzene and cis-1,2-dichloroethylene were reported in the ground water sample collected from MW-3. None of the reported concentrations exceeded the established NCGWQS, if established. Currently, there is no NCGWQS established for chloroethane; therefore, the concentration is reportable.

### **MW-4:**

Detectable and/or estimated concentrations of benzene, chlorobenzene, chloroethane, 1,1-dichloroethane, cis-1,2-dichloroethylene and tetrahydrofuran were reported in the ground water sample from MW-4. None of the reported concentrations exceeded the NCGWQS, if established. Currently, there is no NCGWQS established for tetrahydrofuran; therefore, the concentration is reportable.

### **WSW-1:**

A detectable concentration of zinc below the NCGWQS was reported in the ground water sample collected from water supply well WSW-1. The concentration did not exceed the NCGWQS.

### **SW-1:**

Detectable and/or estimated concentrations of benzene, cis-1,2-dichloroethylene and zinc was reported in the surface water sample collected from SW-1. The concentrations do not exceed the NCGWQS.

### **SW-2:**

No detectable concentrations of requested method constituents were reported in the surface water sample collected from SW-2.

### **SW-3:**

No detectable concentrations of requested method constituents were reported in the surface water sample collected from SW-3.

Warren County Closed Sanitary Landfill  
Second Semi-Annual 2014 Monitoring Event

**Equipment Blank:**

No detectable concentrations of requested method constituents were reported in the equipment blank.

**Trip Blank:**

No detectable concentrations of requested method constituents were reported in the trip blank.

The current laboratory analytical results are summarized in **Table 2**. Historical laboratory data is summarized in **Table 3**. A copy of the laboratory analytical report is attached as **Appendix A**. An environmental monitoring NCDENR report form is enclosed as **Appendix B**.

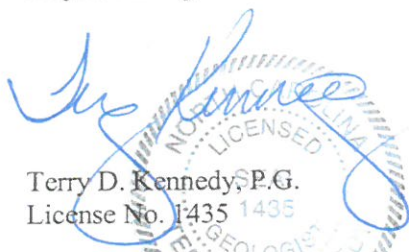
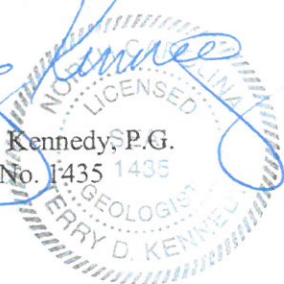
Based upon the current sampling data, no ground water quality violations exist at the site. The next scheduled sampling event will be conducted in February 2015.

Please call if you have any questions or require any additional information at (704) 289-5881.

Sincerely,

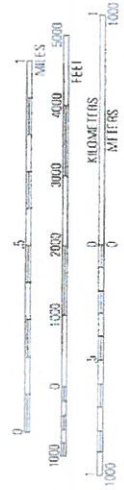
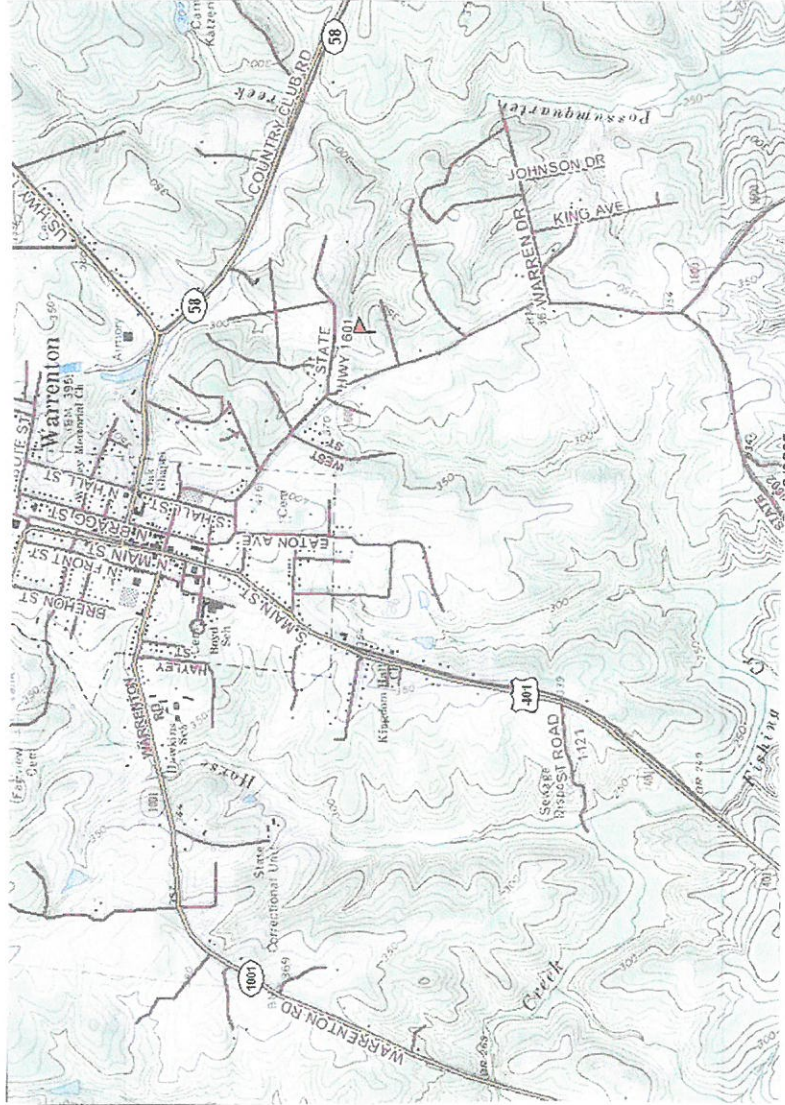


Laura Minor  
Project Manager

  
Terry D. Kennedy, P.G.  
License No. 1435  


## FIGURES








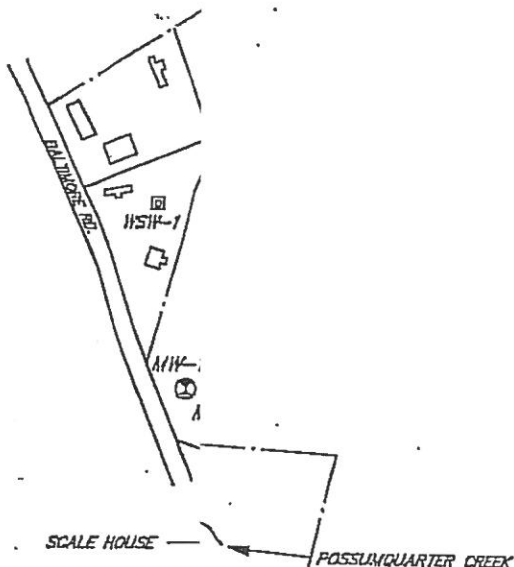


WARREN COUNTY CLOSED SANITARY LANDFILL  
559 BALTIMORE ROAD  
WARRENTON, WARREN COUNTY, NC

RESOLVE ENVIRONMENTAL SERVICES, PLLC	Figure: 1
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# LEGEND

-  NC TYPE II MONITORING WELL
-  NC TYPE III MONITORING WELL
-  APPROXIMATE PROPERTY BOUNDARY
-  CREEK
-  WATER SUPPLY WELL




NOTE: Site Map based on Resolve Environmental Services, P.A. "Sampling Location Map" (date unknown).

## SITE MAP

WARREN COUNTY LANDFILL  
559 BALTIMORE ROAD, WARRENTON, WARREN COUNTY, NC  
PERMIT # 93-01

Date: 09/15/11 Drawn by: LAM Figure: 2

RESOLVE ENVIRONMENTAL SERVICES, PLLC

0 150 300  
  
 ( IN FEET )  
 1 inch = 300 ft.



## TABLES

**TABLE 1**  
**MONITORING WELL GAUGING AND FIELD PARAMETER DATA**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

**Date:** 8/26/14

<b>Sample Location</b>	<b>Total Well Depth (feet)</b>	<b>Depth to Water (feet)</b>	<b>Temperature (in C)</b>	<b>pH</b>	<b>Specific Conductance (µS/cm)</b>	<b>Volume Purged (gals)</b>
MW-1A	40.83	34.06	16.86	5.90	125	3.75
MW-2	15.70	8.14	15.32	6.13	313	3.75
MW-3	28.86	5.89	14.91	6.01	182	12.00
MW-4	22.00	4.14	15.84	6.29	334	9.00

**Notes:**

- Gauging and field parameters collected on August 25, 2014 by Resolve personnel.
- All measurements relative to the top of well casing.

**TABLE 2**  
**SUMMARY OF LABORATORY ANALYSES-GROUND WATER SAMPLES**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

Date : 8/26/14

Date: 8/26/14

Analytical Method →		Appendix I - 8260								Appendix I - 6010			
Contaminant of Concern →		Benzene	Chlorobenzene	Chloroethane	1,1-Dichloroethane	p-Dichlorobenzene	cis-1,2-Dichloroethylene	Tetrahydrofuran	Cobalt	Barium	Lead	Zinc	
Well ID	Date Collected (mm/dd/yy)												
NCGWQS (ug/L)		1	50	NS	6	6	70	NS	NS	700	15	2,100	
MW-1A	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	<50	<200	5.5	43.0	
MW-2	08/25/14	0.62J	<0.24	<0.50	<0.26	2.3	1.7	<1.3	72.7	232	13.9	64.2	
MW-3	08/25/14	0.65J	1.1	3.2	<0.26	2.5	4.2	<1.3	<50	<200	<5.0	<20	
MW-4	08/25/14	0.27J	0.56J	0.59J	0.53J	<0.20	1.9	6.2	<50	<200	<5.0	<20	
SW-1	08/25/14	0.35J	<0.24	<0.50	<0.26	<0.20	1.4	<1.3	<50	<200	<5.0	27.1	
SW-2	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	<50	<200	<5.0	<20	
SW-3	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	<50	<200	<5.0	<20	
WSW-1	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	<50	<200	<5.0	30.2	
Equipment Blank	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	<50	<200	<5.0	<20	
Trip Blank	08/25/14	<0.24	<0.24	<0.50	<0.26	<0.20	<0.33	<1.3	NR	NR	NR	NR	

Notes:

- Results reported in µg/L (micrograms per liter)
- NCGWQS: North Carolina Ground Water Quality Standard as specified in T15A NCAC 2L .0202.
- < : Less than the method detection limit specified in the laboratory report.
- NS: Not specified.
- J: Estimated concentration.
- NR: Analysis not requested.

**TABLE 3**  
**HISTORICAL SUMMARY OF LABORATORY ANALYSES-GROUND WATER SAMPLES**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

Date : 8/26/14

Date : 8/26/14

Analytical Method →		Appendix I - 8260							Appendix I - 6010/200.7		7470
Contaminant of Concern →		Benzene	Chlorobenzene	Chloroethane	1,4-Dichlorobenzene/ p-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Tetrahydrofuran	Chromium	Lead	Mercury
Well ID	Date Collected (mm/dd/yy)										
NCGWQS (ug/L)		1	50	NS	6	6	70	NS	10	15	1
MW-1A	8/10/2006	1.3	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<10	15	NR
	2/22/2007	1.4	<1.0	<1.0	<1.0	<1.0	2.5	NR	33	61	NR
	8/27/2007	1.3	<1.0	<1.0	1.4	<1.0	2.6	<10.0	<5.0	<5.0	<0.20
	2/27/2008	1.7	<1.0	<1.0	1.9	<1.0	3.0	<10.0	<5.0	<5.0	<0.20
	8/26/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	15.2	25.5	<0.20
	2/25/2009	1.2	<1.0	<1.0	2.2	<1.0	2.5	<10.0	8.1	14.8	0.21
	8/19/2009	1.52	<1.00	<1.00	1.91	<1.00	2.27	<20.0	<5.00	<5.00	<0.200
	2/8/2010	1.41	<0.210	<0.270	2.22	<0.240	2.77	NR	3.72	4.66	0.101
	8/12/2010	1.29	<0.210	<0.270	2.23	<0.240	2.56	<1.00	5.10	10.5	<0.0800
	2/16/2011	0.839 J	<0.210	<0.270	1.45	<0.240	1.62	<1.00	31.3	57.1	0.383
	8/23/2011	0.88 J	<0.20	<0.50	1.1	<0.25	2.1	<2.0	<10	5.3	NR
	2/17/2012	1.2	<0.20	<0.50	1.9	<0.25	2.3	<2.0	20.3	38.6	NR
	8/27/2012	1.4	<0.20	<0.50	2.4	<0.25	2.6	<2.0	10.3	17.8	NR
	2/14/2013	1.3	<0.20	<0.50	<0.20	<0.21	2.6	<1.0	<10	12.8	NR
	8/13/2013	0.90 J	<0.20	<0.50	2.5	<0.21	2.4	<1.0	<10	<5.0	NR
	2/11/2014	0.91 J	<0.24	<0.50	2.2	<0.26	1.9	<1.3	<10	15.5	NR
	8/25/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	5.5	NR
MW-2	8/10/2006	1.5	<1.0	9.2	4.3	<1.0	10	NR	<10	<10	NR
	2/22/2007	1.3	1.1	7.8	3.8	<1.0	8.1	NR	<5.0	<5.0	NR
	8/27/2007	1.1	1.6	6.9	2.9	<1.0	8.2	<10.0	<5.0	<5.0	<0.20
	2/27/2008	1.6	1.9	7.3	4.7	<1.0	9.9	<10.0	<5.0	<5.0	<0.20
	8/26/2008	<1.0	<1.0	4.6	2.8	<1.0	5.5	19.1	<5.0	<5.0	<0.20
	2/25/2009	1.5	1.7	9.7	5.4	<1.0	10.2	<10.0	<5.0	<5.0	<0.20
	8/19/2009	1.21	1.48	7.50	3.15	<1.00	6.27	<20.0	<5.00	<5.00	<0.200
	2/8/2010	0.837	1.07	5.62	2.70	0.372	5.76	NR	<2.00	<3.00	<0.0800
	8/12/2010	1.49	2.01	8.34	4.22	0.797	9.49	<1.00	<2.00	1.92	<0.0800
	2/16/2011	1.25	2.00	6.22	3.72	0.670 J	7.14	<1.00	<2.00	<1.50	<0.0800
	8/23/2011	0.65 J	1.3	3.9	2.1	0.33 J	4.5	<2.0	<10	8.7	NR
	2/17/2012	1.6	2.0	7.2	4.3	0.97 J	9.5	<2.0	<10	<5.0	NR
	8/27/2012	0.66 J	1.0	1.8 J	2.0	0.33 J	3.3	<2.0	<10	6.1	NR
	2/14/2013	1.5	2.0	9.0	4.8	0.96 J	9.1	<1.0	<10	<5.0	NR
	8/13/2013	2.6	2.9	10.0	6.6	1.3	15.2	<1.0	<10	22.3	NR
	2/11/2014	1.7	2.0	9.0	5.1	0.77 J	10.2	<1.3	<10	<5.0	NR
	8/25/2014	0.62 J	<0.24	<0.50	2.3	<0.26	1.7	<1.3	<10	13.9	NR

**TABLE 3**  
**HISTORICAL SUMMARY OF LABORATORY ANALYSES-GROUND WATER SAMPLES**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

Date : 8/26/14

Analytical Method →		Appendix I - 8260							Appendix I - 6010/200.7		7470
Contaminant of Concern →		Benzene	Chlorobenzene	Chloroethane	1,4-Dichlorobenzene/ p-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Tetrahydrofuran	Chromium	Lead	Mercury
Well ID	Date Collected (mm/dd/yy)										
NCGWQS (ug/L)		1	50	NS	6	6	70	NS	10	15	1
MW-3	8/10/2006	<1.0	<1.0	<1.0	<1.0	2.4	2.8	NR	<10	<10	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	2.6	3.9	NR	<5.0	<5.0	NR
	8/27/2007	<1.0	<1.0	2.3	<1.0	2.3	4.4	17.2	<5.0	<5.0	0.23
	2/27/2008	<1.0	<1.0	1.20	1.10	2.4	5.5	27.0	<5.0	<5.0	<0.20
	8/26/2008	<1.0	<1.0	<1.0	<1.0	1.7	2.6	19.1	<5.0	<5.0	<0.20
	2/25/2009	<1.0	<1.0	<1.0	<1.0	1.9	3.8	20.9	<5.0	<5.0	<0.20
	8/19/2009	<1.00	<1.00	1.29	<1.00	1.67	3.46	26.3	<5.00	<5.00	<0.200
	2/8/2010	0.514	0.817	1.05	0.996	1.61	3.96	NR	3.12	<1.50	<0.0800
	8/12/2010	0.413	0.544	<0.270	0.853	1.65	3.08	15.2	2.83	2.08	<0.0800
	2/16/2011	0.369 J	0.642 J	0.764 J	0.800 J	1.30	2.87	15.6	2.26 J	<1.50	<0.0800
	8/23/2011	0.30 J	0.64 J	<0.50	0.63 J	0.92	2.4	15.4	<10	<5.0	NR
	2/17/2012	0.35 J	0.62 J	0.68 J	0.71 J	0.80 J	2.5	14.0	<10	<5.0	NR
	8/27/2012	0.32 J	0.66 J	<0.50	0.66 J	0.67 J	2.0	10.2	<10	<5.0	NR
	2/14/2013	0.41 J	0.60 J	1.6 J	0.75 J	0.92 J	2.3	8.8	<10	<5.0	NR
	8/13/2013	0.41 J	0.67 J	0.58 J	0.79 J	0.78 J	2.5	8.0	<10	<5.0	NR
MW-4	2/11/2014	0.32 J	0.67 J	<0.50	0.68 J	0.63 J	2.0	7.4	<10	<5.0	NR
	8/25/2014	0.65 J	1.1	3.2	2.5	<0.26	4.2	<1.3	<10	<5.0	NR
	8/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<10	<10	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<5.0	<5.0	NR
	8/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	13.0	<5.0	<0.20
	2/27/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	22.5	<5.0	<0.20
	8/26/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	63.3	15.6	<0.20
	2/25/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	7.9	<5.0	<0.20
	8/19/2009	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<20.0	12.2	<5.00	<0.200
	2/8/2010	0.250	<0.210	<0.270	<0.250	0.401	0.599	NR	14.4	<1.50	<0.0800
	8/12/2010	0.295	<0.210	<0.270	<0.250	<0.240	0.715	<1.00	10.4	3.27	<0.0800
	2/16/2011	0.250 J	<0.210	<0.270	<0.250	0.346 J	0.607 J	<1.00	6.65 J	<1.50	<0.0800
	8/23/2011	0.22 J	<0.20	<0.50	<0.23	0.25 J	0.47 J	<2.0	180	30.3	NR
	2/17/2012	0.27 J	<0.20	<0.50	<0.23	0.28 J	0.81 J	<2.0	109	15.1	NR
	8/27/2012	0.33 J	<0.20	<0.50	<0.23	0.32 J	0.96 J	<2.0	23.5	<5.0	NR
SW-1	2/14/2013	0.38 J	<0.20	<0.50	0.31 J	0.40 J	1.4	<1.0	30.2	<5.0	NR
	8/13/2013	0.31 J	<0.20	<0.50	0.31 J	0.34 J	1.4	<1.0	<10	<5.0	NR
	2/11/2014	0.35 J	<0.24	<0.50	0.30 J	0.39 J	1.4	<1.3	<10	<5.0	NR
	8/25/2014	0.27 J	0.56 J	0.59 J	<0.20	0.53 J	1.9	6.2	<10	<5.0	NR
	8/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<10	94	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	NR	<5.0	<5.0	NR
	8/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	2/27/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/26/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	248	106	<0.20
	2/25/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/19/2009	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/8/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	NR	<2.00	<1.50	<0.0800
	8/12/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	<1.00	<2.00	<1.50	<0.0800
	2/16/2011	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	<1.00	6.91 J	3.79	<0.0800
	8/23/2011	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY

**TABLE 3**  
**HISTORICAL SUMMARY OF LABORATORY ANALYSES-GROUND WATER SAMPLES**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

Date : 8/26/14

Analytical Method →		Appendix I - 8260							Appendix I - 6010/200.7		7470
Contaminant of Concern →		Benzene	Chlorobenzene	Chloroethane	1,4-Dichlorobenzene/ p-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Tetrahydrofuran	Chromium	Lead	Mercury
Well ID	Date Collected (mm/dd/yy)										
NCGWQS (ug/L)		1	50	NS	6	6	70	NS	10	15	1
SW-2	8/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<10	<10	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<5.0	<5.0	NR
	8/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	2/27/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/26/2008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/25/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/19/2009	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<20.0	49.4	79.4	0.314
	2/8/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	NR	3.04	1.87	<0.0800
	8/12/2010	0.143	0.240	<0.270	0.393	<0.240	1.14	7.77	<2.00	1.67	<0.0800
	2/16/2011	<0.140	<0.210	<0.270	<0.250	<0.240	0.646 J	3.06	<2.00	<1.50	<0.0800
	8/23/2011	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	2/17/2012	<0.20	<0.20	<0.50	<0.23	<0.25	<0.26	<2.0	<10	5.1	NR
	8/27/2012	<0.20	<0.20	<0.50	<0.23	<0.25	<0.26	<2.0	<10	<5.0	NR
	2/14/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	<10	<5.0	NR
	8/13/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	<10	<5.0	NR
	2/11/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	<5.0	NR
	8/25/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	<5.0	NR
SW-3	8/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<10	<10	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<5.0	<5.0	NR
	8/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	2/27/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/26/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	2/25/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10.0	<5.0	<5.0	<0.20
	8/19/2009	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<20.0	<5.00	<5.00	<0.200
	2/8/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	NR	<2.00	<1.50	<0.0800
	8/12/2010	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	2/16/2011	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	<1.00	<2.00	<1.50	<0.0800
	8/23/2011	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	2/17/2012	<0.20	<0.20	<0.50	<0.23	<0.25	<0.26	<2.0	<10	<5.0	NR
	8/27/2012	<0.20	<0.20	<0.50	<0.23	<0.25	0.35 J	<2.0	<10	<5.0	NR
	2/14/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	<10	<5.0	NR
	8/13/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	<10	<5.0	NR
	2/11/2014	<0.24	<0.24	<0.50	<0.20	<0.26	0.44 J	<1.3	<10	<5.0	NR
	8/25/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	<5.0	NR



**TABLE 3**  
**HISTORICAL SUMMARY OF LABORATORY ANALYSES-GROUND WATER SAMPLES**  
**WARREN COUNTY CLOSED SANITARY LANDFILL**

Date : 8/26/14

Analytical Method →		Appendix I - 8260							Appendix I - 6010/200.7		7470
Contaminant of Concern →		Benzene	Chlorobenzene	Chloroethane	1,4-Dichlorobenzene/ p-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Tetrahydrofuran	Chromium	Lead	Mercury
Well ID	Date Collected (mm/dd/yy)										
NCGWQS (ug/L)		1	50	NS	6	6	70	NS	10	15	1
WSW-1/WS/WSW	8/10/2006	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/22/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NR	<5.0	<5.0	NR
	8/27/2007	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/27/2008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	8/26/2008	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/25/2009	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	8/19/2009	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2/8/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	NR	<2.00	4.29	0.272
	2/25/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	NR	<2.00	<1.50	0.338
	8/12/2010	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	<1.00	<2.00	2.19	0.225
	2/16/2011	<0.140	<0.210	<0.270	<0.250	<0.240	<0.450	0.186	<2.00	<1.50	0.242
	8/23/2011	<0.20	<0.20	<0.50	<0.25	<0.25	<0.26	<2.0	<10	<5.0	NR
	2/17/2012	<0.20	<0.20	<0.50	<0.23	<0.25	<0.26	<2.0	<10	<5.0	NR
	8/27/2012	<0.20	<0.20	<0.50	<0.23	<0.25	<0.26	<2.0	<10	<5.0	NR
	2/14/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	10.1	<5.0	NR
	8/13/2013	<0.21	<0.20	<0.50	<0.20	<0.21	<0.24	<1.0	<10	<5.0	NR
	2/11/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	<5.0	NR
	8/25/2014	<0.24	<0.24	<0.50	<0.20	<0.26	<0.33	<1.3	<10	<5.0	NR

Notes:

- Results reported in µg/L (micrograms per liter) .
- NCGWQS: North Carolina Ground Water Quality Standard as specified in T15A NCAC 2L .0202.
- < : Less than the method detection limit specified in the laboratory report.
- NR: Analysis not requested or sample was not collected.
- NS: Not specified.
- Concentrations in bold face type exceeded the 2L standard.
- Concentrations of tetrachloroethene (0.254 µg/L and 0.357 µg/L, respectively) were reported in MW-3 and WSW-1 on 2/8/2010; a concentration of tetrachloroethene (0.189 J ug/L) was reported in MW-3 on 2/16/11; concentrations of trichloroethylene (0.37 J ug/L and 0.40 J ug/L, respectively) were reported in MW-1A and MW-2 on 2/17/12; a concentration of beryllium (6.5 ug/L) was reported in MW-1A on 2/17/12; a concentration of toluene (0.22 J µg/L) was reported in surface water sample SW-3 on 8/27/12; concentrations of ethylbenzene (0.37 J µg/L), toluene (0.23 J µg/L) and barium (230 µg/L) reported in the sample collected from MW-2 on 8/13/13; a concentration of zinc (43.0 µg/L) was reported in the sample collected from MW-1A on 8/25/14; concentrations of cobalt (72.7 µg/L) and zinc (64.2 µg/L) were reported in the sample collected from MW-2 on 8/25/14; concentrations of zinc were reported in samples SW-1 (27.1 µg/L) and WSW-1 (30.2 µg/L) on 8/25/14.
- J: Estimated concentration.

## APPENDICES

**APPENDIX A**  
**Laboratory Analytical Report – Ground Water Samples**

**APPENDIX B**  
**Environmental Monitoring NCDENR Report Form**

<b>DENR USE ONLY:</b>	<input type="checkbox"/> Paper Report	<input type="checkbox"/> Electronic Data - Email CD (data loaded: Yes / No )	Doc/Event #:
NC DENR			<b>Environmental Monitoring Reporting Form</b>
Division of Waste Management - Solid Waste			

Notice: This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

#### Instructions:

- Prepare one form for each individually monitored unit.
- Please type or print legibly.
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i)).
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

#### Solid Waste Monitoring Data Submittal Information

Name of entity submitting data (laboratory, consultant, facility owner):

Resolve Environmental Services, PLLC

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:

Name: Laura Minor

Phone: 704-289-5881

E-mail: resolve@carolina.rr.com

Facility name:	Facility Address:	Facility Permit #	NC Landfill Rule: (.0500 or .1600)	Actual sampling dates (e.g., October 20-24, 2006)
Warren County Landfill	S.R. 1600/559 Baltimore Road Warrenton, NC	93-01	.1600	August 25, 2014

#### Environmental Status: (Check all that apply)

☐ Initial/Background Monitoring ☐ Detection Monitoring ☒ Assessment Monitoring ☐ Corrective Action

#### Type of data submitted: (Check all that apply)

☒ Groundwater monitoring data from monitoring wells ☐ Methane gas monitoring data  
☒ Groundwater monitoring data from private water supply wells ☐ Corrective action data (specify) \_\_\_\_\_  
☐ Leachate monitoring data ☐ Other(specify) \_\_\_\_\_  
☒ Surface water monitoring data

#### Notification attached?

☒ No. No groundwater or surface water standards were exceeded.  
☐ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.  
☐ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

#### Certification

To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.

Marshall Brothers

Public Works Director

252-257-1948

Facility Representative Name (Print)

Title

(Area Code) Telephone Number

Affix NC Licensed/ Professional Geologist Seal

Signature

Date

559 Baltimore Road, Warrenton, NC 27589

Facility Representative Address

NC Geological Co. C-416 (Resolve Environmental Services, PLLC): Terry Kennedy

NC PE Firm License Number (if applicable effective May 1, 2009)

Revised 6/2009

